

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/087,197

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**Title:** Incremental Saves for  
Efficient Distributed State  
Stores

Examiner: Hwang, Joon H.

Group/Art Unit: 2166

Atty. Dkt. No: 5681-11800

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated below.

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Pt. J.

July 24, 2006

Signature \_\_\_\_\_

Date \_\_\_\_\_

## **PRE-APPEAL BRIEF REQUEST FOR REVIEW**

**Mail Stop AF**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Dear Sir:

Applicants request review of the rejection in the above-identified application. No amendments are being filed with this request. This request is being filed with a notice of appeal. The review is requested for the reasons stated below.

Claims 1, 3-9, 11-15 and 17-20 remain pending in the application. Reconsideration of the present case is earnestly requested in light of the following remarks. Please note that for brevity, only the primary arguments directed to the independent claims are presented, and that additional arguments, e.g., directed to the subject matter of the dependent claims, will be presented if and when the case proceeds to Appeal.

The Examiner rejected claims 1, 3-9, 11-15 and 17-20 under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement. Applicants respectfully traverse this rejection for at least the following reasons. The Examiner contends that the limitation of “individual attributes” is not supported by Applicants’ specification. Applicants respectfully disagree and submit that Applicants’ claims are fully supported by the specification.

For example, claim 1 recites, in part, an application server comprising a client state of session data and configured to track accesses of individual attributes of a client state of session data. Claim 1 further recites, in part, wherein to track accesses of the individual attributes of the client state, the application server is configured to store information identifying accessed individual attributes and wherein a distributed store is configured to synchronize a primary state with the client state according to the tracked accessed individual attributes.

Applicants' specification describes that session data (both a primary state and a client state) may include one or more attributes and that accesses of the attributes may be tracked and that a subset of the tracked accessed

attributes may be determined and used to synchronize a primary state with a client state. For instance, the specification describes that an application server may track modifications of one or more attributes of a client state. Additionally, in one embodiment an application server might compare a client state to a benchmark of the client state to determine a subset of the attributes that were modified. Applicants' specification also describes that in some embodiments only attributes that are mutably accessed may be tracked. *See, e.g.* page 4, lines 3-21; page 13, lines 22-29; page 14, lines 1-22; page 15, lines 14-30; page 16, lines 4-17; page 17, lines 1-29. Thus, Applicants' specification clearly describes the ability to track, compare, and synchronize various individual or specific ones of the one or more attributes of session data.

Furthermore, as described in the M.P.E.P at 2163.02, "[t]he subject matter of the claim need not be described literally (i.e. using the same terms or *in haec verba*) in order for the discloser to satisfy the description requirement" (parenthesis in original).

Additionally, the Examiner has not presented any evidence or reasoning to explain why one skilled in the art would not recognize the ability to track access of individual attributes of a client state of session data in Applicants' specification. Instead, the Examiner has merely stated, "[c]laims 1, 3-9, 11-15, and 17-20 recite the limitation 'individual' attributes which is not supported by the specification." However, as explained in the M.P.E.P at 2163.04, "[t]he examiner has the initial burden of presenting a preponderance of evidence why a person skilled in the art would not recognize in an applicants' disclosure a description of the invention defined by the claims" (emphasis added). The Examiner has clearly failed to meet this burden.

The Examiner rejected claims 1, 3-5, 8, 9, 11, 12, 15, 17 and 18 under 35 U.S.C. § 103(a) as being anticipated by Montero et al. (U.S. Publication 2002/0143958) (hereinafter "Montero") in view of Bauer et al. (U.S. Patent 5,870,759) (hereinafter "Bauer, et al."). The Examiner rejected claims 6, 13 and 19 under 35 U.S.C. § 103(a) as being unpatentable over Montero in view of Bauer and further in view of Morris (U.S. Patent 5,813,017), and claims 7, 14 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Montero in view of Bauer and further in view of Lin et al. (U.S. Patent 6,546,135) (hereinafter "Lin"). Applicants respectfully traverse these rejections for at least the following reasons.

Furthermore, regarding claim 1 and contrary to the Examiner's assertion, Montero in view of Bauer fails to teach or suggest a first application server of the plurality of application servers, comprising a client state of the session data accessible to processes executing within the application server, wherein the first application server is configured to track accesses of the individual attributes of the client state, wherein to track accesses of the individual attributes of the client state, the first application server is configured to store information identifying the accessed individual attributes. Montero teaches a system in which a central database of session data is updated with session data modified in individual application servers periodically, such as according to a certain time interval or after a certain number of changes (Montero, Abstract and paragraphs [0026] and [0049]). Montero does not teach claim 1 as recited above. The Examiner, regarding the rejection of claim 1, cites paragraphs [0011], [0014], [0020], [0026], [0035], [0036], [0042] and [0046] of Montero. However, these paragraphs do not mention *an application server configured to track accesses of the individual attributes of the client state, wherein to track accesses of the individual attributes of the client state, the first application server is configured to store information identifying the accessed individual attributes*. Instead, paragraphs [0011] and [0014] describe how previous methods utilize cookies for servicing session requests, and paragraph [0020] describes a previous method that updates the session data each time the data is changed. Paragraph [0026] summarizes Montero's system including a description of how application servers write copies of session data to common shared databases at designated, periodic times, or after a specified number of changes to session data have been made. Paragraphs [0035] and [0036] describes the purpose of application servers in a server farm with an associated database server for storing backup data of the client sessions. Paragraph [0042] describes how the use of a load balance scheme may ensure that http requests in a particular session are always sent to the same application server. Finally, paragraph [0046] merely mentions that if enough memory is not

provided to hold all of the active session data, creation of a new session may result in the need to write out the oldest locally stored http session to the shared database.

Thus, none of the Examiner's cited passages mentions *an application server configured to track accesses of the individual attributes of the client state, wherein to track accesses of the individual attributes of the client state, the first application server is configured to store information identifying the accessed individual attributes*. In fact, nowhere does Montero teach these features of claim 1. In contrast, Montero teaches only that application servers save their copies of session data to the shared session database periodically to reduce the number of writes to the database, thereby reducing strain on system resources. For instance, Montero teaches, "instead of updating the session data in the database after every request or every attribute change, each of the servers maintains a *fully current copy* of the http session data in its local RAM, but writes a *copy* of the session data to the central database only at specified intervals" (emphasis added, Montero, paragraph [0039]). Since Montero specifically teaches away from updating the session data in the database after every request or every attribute change, there would be no reason to track individual attribute accesses in Montero. Thus, it would not make sense to modify Montero according to the teachings of another reference to track individual attribute accesses.

In the Advisory Action the Examiner argues, "Montero also teaches updating session data in the database after a specified number of changes to the session data have been made; therefore, if x is the specified number, then x-1 updates are held by the application server [until] there are x number of updates". However, Applicants' argument is not that Montero fails to maintain the number of updates to the session data. Instead, Applicants' argument is that Montero teaches away from an application server configured to track accesses of the individual attributes of the client state, wherein to track accesses of the individual attributes of the client state, the first application server is configured to store information identifying the accessed individual attributes. Counting the number of times session data is updated and then writing the entire copy of the session data after x number of updates, as argued by the Examiner, not only fails to teach or suggest, but also teaches away from storing information *identifying* the accessed individual attributes to track accesses of individual attributes of the client state.

As noted above, Montero's application servers do not track accesses of the individual attributes of the client state by storing information identifying the accessed individual attributes. Instead, an application server in Montero's system either keeps track of how long it has been since its respective copy of the session data has been copied to the session database or keeps track of the number of times its copy of the session data has been changed or both. Rather than keep track of the *individual accesses of particular attributes by storing information identifying the accessed individual attributes*, Montero refers to the number of times a local copy of session data has been changed. For example, Montero describes how a local copy of the session data may be copied to the session database "after 3 updates to the local copy of the session data" (Montero, paragraph [0049]). Montero additionally teaches comparing a "last access time" to the current time to determine whether a local copy data has been modified (Montero, paragraph [0053]). Comparing the numbers of updates or last write times of the session data to specified values is not *tracking individual accesses of the attributes of the client state, wherein to track the individual accesses, the first application server is configured to store information identifying the accessed individual attributes*. Moreover, Montero's system looks at updates to the session data as a whole, but clearly does not identify individual accessed attributes of the session data. Furthermore, as noted above, it would not make sense in Montero's system to identify particular accessed attributes of the session data since Montero specifically writing a copy of the session data to the central database "only at specified intervals" "instead of updating the session data in the database after every request or every attribute change". Thus, Montero in view of Bauer fails to teach or suggest *an application server configured to track accesses of the individual attributes of the client state, wherein to track accesses of the individual attributes of the client state, the first application server is configured to store information identifying the accessed individual attributes*.

The Examiner admits that Montero fails to teach this feature of claim 1, and instead relies on Bauer. However, Bauer teaches that each of the clients (which are not application servers) accesses its own client

database, which may later be synchronized with the single central database by the database synchronizer. Applicants note that a database as described in Bauer refers to a collection of data that is manipulated by clients. More specifically, Bauer's data is described as tabular data for order information, delivery status, or field service information (1:4-14), which may be manipulated by clients in a database. The order information, delivery status, or field service information stored in the database in Bauer is not *session data*. Session data is a well-understood concept in the art of application servers, and the data stored in the databases in Bauer is clearly not described as session data. Bauer does not pertain to the field of session data as used by application servers. Thus, the Examiner's reliance on Bauer to teach an application server configured to store information identifying the accessed individual attributes of session data is clearly improper.

Since Bauer has nothing to do with application servers or session data, there would be no reason to apply its teachings to Montero, especially in light of the fact that Montero specifically teaches writing a copy of the session data to the central database "only at specified intervals" "instead of updating the session data in the database after every request or every attribute change". Thus, for at least the reasons provided above, Montero in view of Bauer fails to teach or suggest *wherein to track accesses of the individual attributes of the client state, the first application server is configured to store information identifying the accessed individual attributes*.

In the Response to Arguments, the Examiner contends that Applicants' previous arguments were against the cited referenced individually. Applicants' respectfully disagree. Applicants previous response (filed January 23, 2006) specifically stated, Montero in view of Bauer fails to teach or suggest wherein the first application server is configured to track accesses of the individual attributes of the client state, wherein to track accesses of the individual attributes of the client state, the first application server is configured to store information identifying the accessed individual attributes", "Montero in view of Bauer fails to teach or suggest wherein to track accesses of the individual attributes of the client state, the first application server is configured to store information identifying the accessed individual attributes", and "even were Montero and Bauer combinable ... the suggested combination would not provide all the features recited in claim 1." Thus, contrary to the Examiner's contention, Applicants' previous arguments were directed to the combination of art cited by the Examiner. Moreover, any statement regarding an individual reference was to show that the Examiner's reliance on the respective reference is misplaced.

Furthermore, the Examiner has failed to provide a proper motivation for modifying the system of Montero. The Examiner states that, "it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Bauer to the system of Montero in order to **reduce communication costs and delays in data synchronization**" (emphasis added). Applicants remind the Examiner that it is not proper to pick and chose isolated teachings from a reference. Instead, the Examiner must consider the reference as a whole; it is improper to combine references where the references teach away from their combination. M.P.E.P. § 2141.02, last paragraph; *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Additionally, *In re Grasselli*, 218 USPQ 769, 779 (Fed. Cir. 1983). As stated by the Examiner, and as disclosed in Bauer, column 1, lines 55-60, and elsewhere, Bauer's system seeks to **minimize delays in synchronization of modified client data with a database storing data that is not fully current**; however, Montero **purposefully introduces delays by only updating at specified time intervals**. More specifically, as noted above, Montero teaches that application servers save their fully-current copies of session data to the shared session database periodically in order to reduce the number of writes to the database, thereby reducing strain on system resources. For instance, Montero teaches, "instead of updating the session data in the database after every request or every attribute change, each of the servers maintains a fully current copy of the http session data in its local RAM, but writes a copy of the session data to the central database only at specified intervals" (emphasis added, Montero, paragraph [0039]). Thus, Montero reduces the number of writes to the database by purposefully introducing delays in the form of periodic writes, and maintains a fully current copy of the session data while Bauer, on the other hand, minimizes delay in synchronization of data between the client and the database, where neither the client nor the database maintain a fully current copy of the tabular data. Therefore, Montero and Bauer clearly teach away from their combination.

It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 218 USPQ 769, 779 (Fed. Cir. 1983).

In the Response to Arguments section, the Examiner points out that motivation to combine reference may come from the references themselves, from knowledge of those skilled in the art or from the nature of the problem to be solved. The Examiner provides a summary of the features of both Montero and Bauer relied on by the Examiner. However, the Examiner has failed to provide any rebuttal to Applicants argument regarding the fact that Montero and Bauer clearly teach away from their combination, as discussed above. The fact that a motivation to combine reference may come from the references themselves, from knowledge of those skilled in the art or from the nature of the problem to be solved does not overcome the fact that the specific references cited by the Examiner teach away from their combination.

Furthermore, even were Montero and Bauer combinable, which Applicants argue they are not, the suggested combination would not provide all the features recited in claim 1, as described above. As noted in the M.P.E.P 2143.03, "[t]o establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

Similar remarks as those above also apply to claims 8, 9 and 15.

The Examiner's rejection of many of the dependent claims is additionally erroneous. For example, the cited art is clearly insufficient to support the rejection of claim 3 as discussed in detail in Applicants' previous response on pp. 9-10.

In light of the foregoing remarks, Applicants submit the application is in condition for allowance, and notice to that effect is respectfully requested. If any extension of time (under 37 C.F.R. § 1.136) is necessary to prevent the above referenced application from becoming abandoned, Applicants hereby petition for such an extension. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert & Goetzel PC Deposit Account No. 501505/5681-11800/RCK.

Also enclosed herewith are the following items:

- ☒ Return Receipt Postcard
- ☒ Notice of Appeal

Respectfully submitted,



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